

**REMARKS**

In the Final Office Action of April 21, 2006, claims 1-30 are pending. Claims 1, 16, 18, 24, 26, and 27 are independent claims from which all other claims depend therefrom. Claims 1, 12-15, 17-18, 24-26, and 28-29 are herein amended. Claims 11 and 25 are herein canceled. Claim 16 stands allowed. Applicants recognize the allowability of claims 12, 15, 17-18, 22, 29, and 30 if rewritten in independent form to include all the limitations of the base claim and any intervening claims. Applicants have herein rewritten claim 18 in independent form. As such, claim 18 is now in allowable form. Also, Applicants have amended independent claims 1 and 24 to include the novel limitations of previously submitted claim 11 and other previously presented dependent claims. In addition, claim 26 is herein rewritten in independent form. Applicants believe that the limitations of claim 26 are also novel. Applicants, respectfully, request that the amendments provided herein be entered since they do not raise new issues that would require further search. This is especially true since the amended limitations have already been examined. None of the amendments contain new limitations that have not been reviewed and examined.

Rejection of claims 1-3, 5-11, 13-14, 19-21, 23-24, and 27-28  
under 35 U.S.C. 103(a)

The Office Action states that claims 1-3, 5-11, 13-14, 19-21, 23-24, and 27-28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens et al. (U.S. Pat. No. 2,960,202) in view of Spokas (U.S. Pat. No. 4,094,393).

Amended claim 1 recites the limitations of an engaging circuit that is coupled to a housing assembly. The engaging circuit includes a first pitot tube that is coupled within the housing assembly and receives hydraulic fluid. A hydraulic fluid flow controller is coupled to the first pitot tube. The engaging circuit engages the housing assembly to a fan shaft in response to the supply of the hydraulic fluid from the first pitot tube. The engaging

circuit also variably controls the fluid pressure to the pitot tube via the hydraulic fluid flow controller.

The Office Action states that Stevens discloses a valve arrangement 152 that teaches the claimed fluid flow controller. Applicants, respectfully, traverse. As stated in the previous response the valve 152 of Stevens is either in an open or a closed state. The open and closed states are, respectively, associated with engagement or disengagement of the helicopter blades. This allows the pilot of the helicopter to manually engage or disengage the helicopter blades. The valve 152 does not provide variable adjustment or associated engagement, as claimed. The valve 152 also merely allows fluid to flow or prevents fluid from flowing to the piston chamber 94. The valve 152 is not adjustable to allow the pilot to select a desired pressure of oil passing through the scoop tube 104.

Amended claim 24 similarly recites the limitations of variably engaging a housing assembly to a fan shaft of an engine cooling fan in response to the supply of hydraulic fluid from a pitot tube and via a valve. The valve is in fluid communication with and is configured to adjust fluid pressure in the pitot tube. As similarly stated above, the valve 152 of Stevens is not adjustable and is not configured to adjust fluid pressure in the scoop tube 104.

Also, Applicants maintain their previous submission that it would not have been obvious to modify and utilize the helicopter clutch mechanism of Stevens to control the engagement of a cooling fan of an engine. Stevens discloses an engine cooling fan 44, which is not engaged through use of the clutch mechanism of Stevens. None of the references utilize a pitot tube as claimed for the engagement of a cooling fan. Applicants believe that to suggest that the recited pitot tube engagement limitations are obvious is to clearly use improper hindsight reasoning. See also arguments submitted in the previous Response of March 9, 2006. Nevertheless, claims 1 and 24 are herein amended to include the novel variability control.

The Office Action states that it is known to drive an engine cooling fan using a hydraulically controlled multi-plate clutch, as shown in Spokas, and

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as such it would have been obvious to drive a cooling fan via the clutch of Stevens. Applicants submit that knowledge of driving an engine cooling fan using a hydraulically controlled multi-plate clutch is irrelevant. Independent claims 1 and 24 do not recite a multi-plate clutch, but rather recite the use of an engaging circuit having a pitot tube for fan shaft engagement. Such use is not shown in any of the references.

The Office Action further states that the motivation to modify Stevens stems from a desire to provide a selective coupling of a fan to a housing. Neither Stevens nor Spokas disclose selective coupling of a fan to a housing. Stevens only discloses manual engagement of helicopter blades. The selective coupling in Stevens is directed to the allowing or disallowing of helicopter blade engagement, as opposed to variable adjustment of cooling fan engagement. Spokas does not disclose selective coupling.

Thus, it would not have been obvious to modify the clutch of Stevens to drive an engine cooling fan. Therefore, since each and every limitation of claims 1 and 24 are not taught or suggested by Stevens and Spokas alone or in combination, that claims 1 and 24 are novel, nonobvious, and are in a condition for allowance. Since claims 2-10, 12-15, 17, 19-23, and 28-29 depend from claim 1, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

With respect to claim 17, the Office Action states that Stevens fails to disclose a controller that provides a cooling signal. Applicants agree. However, the Office Actions states that Spokas discloses a device 126 for controlling fluid flow. Applicants submit that the device 126 of Spokas is a temperature sensitive element, which simply opens with an increase in temperature. The device 126 is not a controller that generates a cooling signal nor is it a controller that receives a cooling signal. Furthermore, the device 126 is used to engage or disengage (ON or OFF) a drive mechanism in response to temperature. The claimed hydraulic fluid flow controller adjusts fluid flow pressure to an engaging circuit in response to a cooling signal. Both Stevens and Spokas fail to disclose the signal generation claimed, the use

of controllers as claimed, and the adjusting of fluid flow pressure as claimed. Thus, claim 17 is further novel and nonobvious for the above-stated reasons.

With respect to claim 23, the Office Action states that Spokas teaches providing a pressure relief valve at 100. Applicants submit that although the valve 100 of Spokas is a pressure relief valve, it does not relieve pressure within a pitot tube. Of course, pressure relief valves exist, but such existence does not anticipate all uses thereof. The valve 100 is used to allow lubricant to flow to a clutch. The opening of the valve 100 does not affect the pressure in the pitot tubes 60, which are simply used as lubricant return lines. Thus, the valve 100 is not the same as and is not used for the same purpose as the valve claimed. Therefore, claim 23 is further novel and nonobvious for the stated reasons.

Claim 27 recites the limitation of a pitot tube that is coupled within a housing and has multiple branches. This limitation is not taught or suggested by either Stevens or Spokas. The Office Action is silent with respect to claim 27. Applicants have stated that although the clutch mechanism of Stevens has a scoop tube 104, the scoop tube 104 does not have multiple branches. The scoop tube 104 is a single tube with a single passage therein that extends from a reservoir in the housing 32, 34, and 36 to the hole 146. The branches of the pitot tube claimed allow for the redirection of hydraulic fluid away from a clutch plate piston, which allows for variable fluid pressure adjustment in the pitot tube and variably controlled engagement of a fan. The pitot tubes of Spokas are also single passages and are used for a different application and purpose as that of the present invention, as stated above.

Thus, Stevens and Spokas also fail to teach or suggest each and every element of claim 27. Therefore, claim 27 is also novel, nonobvious, and is in a condition for allowance. Since claim 30 depends from claim 27, it too is novel, nonobvious, and is in a condition for allowance for at least the same reasons.

Rejection of Claims 4 and 25-26 under 35 U.S.C. 103(a)

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Claims 4 and 25-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Spokas and further in view of Matson (U.S. Pat. No. 4,633,986).

Applicants submit that since claim 4 depends from claim 1, that it is also novel, nonobvious, and is in a condition for allowance for at least the same reasons.

Claim 25 is herein canceled.

Claim 26 is herein rewritten in independent form. The Office Action states that Matson is analogous art and that it shows cooling fins on the outside of a clutch housing. Applicants submit that regardless of whether this is true, Stevens, Spokas, and Matson clearly fail to teach or suggest the limitation of channeling hydraulic fluid through a piston housing, which is received from a pitot tube, into a fan shaft chamber and directing said hydraulic fluid through said fan shaft chamber into and through a clutch pack. Stevens fails to disclose a fan shaft. Also, in Stevens oil is circulated between the housing 32, 34, and 36 and a groove 110 in the engine shaft 14. The oil is not directed into the blade shaft 12. In Spokas the pitot tubes 60 are used as oil return devices to return the oil to the fluid sump and are not used to direct the oil to the clutch 30. Also, although Matson discloses a pitot tube 42 for directing oil to clutch plates, Matson fails to teach or suggest the stated limitations. The oil in Matson is not directed through a piston housing or into or through a fan shaft chamber. The oil in Matson is directed around the clutch engagement face 70 and the brake engaging face 87. Nowhere in the Matson reference is a fan shaft chamber disclosed or suggested. Thus, claim 26 is further novel and nonobvious for the above-stated reasons.

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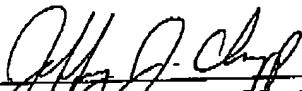
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In light of the amendments and remarks, Applicants submit that all the rejections are now overcome. The Applicants have added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, he is respectfully requested to contact the undersigned attorney.

The Commissioner is hereby authorized to charge any additional fees, which may be required, or credit any overpayment to Deposit Account No. 50-0476.

Respectfully submitted,

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